

Amendment and Response

First Names Inventor: Zoerb, Hans

Serial No.: 10/559,504

Filed: May 22, 2006

Attorney Docket No.: CGL03/0204US01

Title: BEVERAGE ADDITIVE MIXTURE OF TREHALOSE AND PROTEIN

REMARKS

The following remarks are made in response to the Final Office Action mailed October 13, 2009. Claims 1, 2, 4-6, 9-11, 14-16 and 19-29 were rejected. With this response, claims 1, 2, 6, 11 and 16 have been amended. Support for the amendments can be found throughout the specification and claims and in particular at paragraph [0005]. No claims have been added or cancelled. Thus, claims 1, 2, 4-6, 9-11, 14-16 and 19-29 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1, 2, 4-6, 9-11, 14-16 and 19-23 as being unpatentable over U.S. Patent No. 5,919,668 to Mandai (hereinafter "Mandai") in view of U.S. Patent No. 6,106,874 to Liebrecht (hereinafter "Liebrecht") and as evidenced by whey vs. soy protein NPL. The Examiner states that Mandai teaches mixing a soybean peptide in 40% solution with trehalose followed by drying the mixture at 50C, which would substantially dehydrate it. The Examiner then states that Mandai teaches adding the mixture to flavored nutritional beverages such as parenteral liquid foods and that because trehalose is mixed with the soybean peptide in 40% solution, it is considered to be substantially distributed throughout the soybean peptide in 40% solution. The Examiner then states that Mandai does not teach the use of whey protein but that whey protein and soy peptides are known to be an important source of proteins in the human diet, citing Liebrecht as teaching the use of whey protein isolates in the creation of a nutritional beverage; the whey proteins being known to be very high in biological activity and thus highly desired by athletes. According to the Examiner, one of ordinary skill in the art at the time of the invention would have been motivated to substitute whey protein for soy peptide in order to produce a beverage that is very high in biological value further citing whey vs. soy protein NPL. The Applicant respectfully disagrees.

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Liebrecht is directed to providing a clear, thin, juice-based beverage containing supplemental calcium without the use of stabilizers (see e.g. col. 3, lines 21-66 through col.4, lines 1-17). Of particular focus in Liebrecht is the use of natural milk mineral concentrate or calcium lactate gluconate to solve the problem of calcium precipitation without the additional use of stabilizers. Liebrecht reports the use of whey protein isolates in the beverages for the advantage of supplying amino acids to the patient as well as calcium (col. 7, lines 38-42), but makes specific mention of the fact that the beverages containing natural milk mineral concentrate or calcium lactate gluconate are clear despite being in the presence of whey protein (col. 6, lines 32-34). Thus, while Liebrecht acknowledges certain health benefits of the whey protein isolate, one of skill in the art would not be motivated to merely substitute the soy peptide of Mandai with the whey protein isolate of Liebrecht to obtain the method, additive or beverage of the claimed invention. In fact, Liebrecht would actually teach away from making such substitution in the claimed invention because the resulting beverage would have unappealing sediment and not be clear in the absence of natural milk mineral concentrate or calcium lactate gluconate.

Furthermore, Liebrecht does not come close to appreciating the need to dehydrate native whey protein or native casein protein in the presence of trehalose because Liebrecht reports a cold water process for producing the beverage. Even if Liebrecht reported the use of trehalose (which it doesn't), such cold water processing would not denature the native whey protein or native casein protein and there would not be a need to protect the protein using trehalose (col. 9, lines 60-63).

The Examiner further states that Mandai teaches that trehalose has a favorable taste masking effect and taste improving effect. The Examiner further states that it is not known if the trehalose of Mandai is added in amount sufficient to mask the taste of the soybean peptide in 40% solution but that it would have been obvious to one of ordinary skill in the art to add trehalose in sufficient quantities to mask the whey protein

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of the composite invention of Mandai in view of Liebreacht in order to produce a beverage that is unaltered in taste by the addition of the "bitter/cardboard tasting" whey protein. Again, the Applicant respectfully disagrees.

The claims have been amended to recite only protein combinations. Moreover, the claims do not recite a "bitter/cardboard tasting" whey protein. One of skill in the art would also recognize that there are distinct differences between peptides and proteins. Peptides, by definition, are compounds of two or more amino acids joined by peptide bonds whereas proteins are any of a class of high molecular weight polymer compounds composed of a variety of alpha-amino acids joined by peptide linkages. In particular, polypeptides and proteins are chains of 10 or more amino acids; however, peptides consisting of more than 50 amino acids are classified as proteins. The larger protein molecules also have different chemical properties than the peptide molecules. One such property is that the peptide molecules carry more flavor/taste than a protein molecule while the protein molecule actually encircles and becomes a carrier for taste/flavor. Thus, the mechanism by which taste/flavor is imparted is much different and that amount of trehalose needed to mask a peptide molecule would be different than the amount needed to mask a protein molecule and it would not be obvious to simply add trehalose to a protein.

Therefore, independent claims 1, 2, 6 and 16 and all claims dependent therefrom are patentable over Mandai in view of Liebrecht as evidenced by whey vs. soy protein NPL and the applicant respectfully requests reconsideration and allowance of these claims.

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Conclusion

In view of the above, Applicant respectfully submits that pending claims 1, 2, 4-6, 9-11, 14-16 and 19-29 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1, 2, 4-6, 9-11, 14-16 and 19-29 is respectfully requested.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Gretchen Skarohlid at Telephone No. (942) 742-2571. In addition, all correspondence should continue to be directed to the following address:

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Respectfully Submitted,

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